Directorate of
Intelligence

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Middle East–South Asia: Nuclear Handbook [redacted]

A Reference Aid

[redacted]

Approved for Release
Date MAR 2000

[redacted]

May 1988

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Directorate of
Intelligence

[redacted]

Middle East–South Asia: Nuclear Handbook [redacted]

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Middle East–South Asia: Nuclear Handbook [redacted]

Summary

Information available as of 15 April 1988 was used in this report.

In the past two decades, countries in the Middle East and South Asia have moved steadily to expand their nuclear capabilities. Activities range from basic university research to operation of sophisticated nuclear power programs and, in some instances, to covert nuclear weapons research and development programs. Like countries in other parts of the world, the states in this area have pursued nuclear programs for a host of reasons—the need for economical energy sources, the desire to develop and to stay close to leading technologies and scientific applications, and the determination to compete for influence, prestige, and power regionally and internationally. The Middle East and South Asia have a history of regional conflict, political volatility, and social disquiet that makes nuclear activity there a subject of special concern. [redacted]

Most countries are interested in nuclear technology for civilian applications:

- Two countries—India and Pakistan—have nuclear power reactors, and nine others, including Egypt and Israel, hope to have power reactors within the next 10 years. Most, however, are unlikely to achieve this goal because of economic and political constraints.
- Nuclear technology could become important to food production. In India, for example, improved crop varieties are being developed from radiation-induced crop mutations.
- The region's health facilities use nuclear technology for insect and pest control, sterilization of medical products, and medical diagnosis and therapy. [redacted]

Most Middle Eastern and South Asian countries have not developed the infrastructure or technical abilities to deal with the safety problems nuclear power can pose. Indian nuclear facilities, for example, already have had frequent—though minor—safety problems. Responses to a Chernobyl' or Three Mile Island–type accident would be much slower and less effective than in the USSR or the United States, and much more human and environmental damage would result than occurred in the USSR. [redacted]

Only a handful of states have pursued weapons development, but the prospects that more will follow suit are strong:

- [redacted]
- India [redacted] probably have the capability to assemble nuclear devices quickly.

[redacted]

[redacted]

None of the states in the region could have initiated or advanced its nuclear program without foreign technology and equipment. The degree of dependence on external assistance varies widely, but even the most sophisticated programs in the region rely on outside help:

- [redacted]
- India has favored self-sufficiency in nuclear power but is showing interest in purchasing Soviet power reactors.
- [redacted]

Although some Middle Eastern and South Asian states are probably pursuing nuclear technology only for prestige, many are serious about developing a nuclear infrastructure that will enable them to utilize the benefits of the technology in the future. Despite growing opposition to nuclear power in parts of the developed world, many Middle Eastern and South Asian states continue to favor it, and the region could become a lucrative market for nuclear suppliers. The United States, which paved the way to nuclear technology for many of the region's states with the Atoms for Peace Program, could play a major role in the region's nuclear future if proliferation concerns can be resolved. [redacted]

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Scope Note

This handbook provides readers with basic facts about nuclear programs in the Middle East and South Asia. It also examines the extent to which countries in the region rely on foreign support for their nuclear programs and the prospects for nuclear weapons proliferation. [redacted]

[redacted]

[redacted]

Pages: 1-15

Exemptions: Not Relevant

[redacted]

- Madras I, 220-MW power reactor:
  - — Heavy-water moderated, natural uranium fuel.
  - — Startup: 1982.
  - — Supplier: Indigenous construction.
  - — Safeguards: No.
- Madras II, 220-MW power reactor:
  - — Heavy-water moderated, natural uranium fuel.
  - — Startup: 1984.
  - — Supplier: Indigenous construction.
  - — Safeguards: No.
- Narora I, 235-MW power reactor (under construction):
  - — Heavy-water moderated, natural uranium fuel.
  - — Startup: 1988 target.
  - — Supplier: Indigenous construction.
  - — Safeguards: No.

Nuclear Reactors

India has the following nuclear reactors:

- Narora II, 235-MW power reactor (under construction):
  - — Heavy-water moderated, natural uranium fuel.
  - — Startup: 1990 target.
  - — Supplier: Indigenous construction.
  - — Safeguards: No.
- Kakrapar I, 235-MW power reactor (under construction):
  - — Heavy-water moderated, natural uranium fuel.
  - — Startup: 1993 target.
  - — Supplier: Indigenous construction.
  - — Safeguards: No.
- Kakrapar II, 235-MW power reactor (under construction):
  - — Heavy-water moderated, natural uranium fuel.
  - — Startup: 1995 target.
  - — Supplier: Indigenous construction.
  - — Safeguards: No.

[redacted]

Pages: 17 - 77

Exemptions: not relevant